Aqua for All

Insights brief:

Strengthening Impact Measurement and Management at the **WASH** and **Gender Nexus**

This Insights Brief is based on a study conducted for **Aqua for All** and **Roots of Impact** by:

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Photo: Project Maji

Summary

In 2022, 2.2 billion people globally lacked access to safe drinking water, and 3.5 billion were without safely managed sanitation. **Women and girls are disproportionately affected**, facing heightened health and safety risks, limited economic opportunities and increased school dropout rates. Yet, the gendered impact of inadequate access to water, sanitation and hygiene (WASH) — particularly within market-based approaches — remains largely underexplored.

The **Impact-Linked Fund for Water, Sanitation and Hygiene (ILF for WASH)** — a programme co-designed by Aqua for All and Roots of Impact — commissioned research to explore the link between WASH and gender.

This Insights Brief summarises the research, which aimed to identify enterprise-level, measurable output indicators within the WASH sector that can serve as **meaningful proxies for gender-related outcomes** across regions in Asia and Africa.

The research confirms a strong correlation between market-based WASH solutions and positive gender outcomes. In line with existing studies, it found that in the <u>short to medium term,</u> improved access to adequate WASH services contributes to increased **safety and security, physical health, surplus time and enhanced learning**. Over the <u>longer term</u>, these gains are typically associated with improved **psychosocial wellbeing**, greater **socio-economic empowerment**, and strengthened **agency and leadership** among women.

WASH is contributory rather than causative: Market-based WASH approaches should prioritise gender sensitiveness and responsiveness over gender transformation. Expected gender outcomes vary significantly across WASH sub-sectors, making it essential to identify key outcome areas for evidence collection.

Impact measurement and management (IMM) capabilities and practices differ considerably among enterprises, driven by differences in data collection and management, access to (end-user) data, assessments types and the metrics selected (e.g. measuring outputs vs. outcomes). IMM practices specific to gender outcomes were often limited among WASH enterprises.

With contracts typically spanning two to four years in the context of Impact-Linked Finance, short- and medium-term gender outcomes are more relevant for structuring incentives. Using standard metrics alongside consideration of each enterprise's contextual conditions is critical. **Sample output indicators** are provided to support the use of proxy indicators for short-to medium term outcomes.

It is recommended to provide **technical assistance (TA)** for gender mainstreaming and integrating gender measurement practices into the operational and IMM frameworks of WASH enterprises.

Context

Access to safe water, sanitation and hygiene (WASH) is essential for good health, livelihoods, education and community resilience. Although recognised as a global priority under the UN Sustainable Development Goal (SDG) 6 — Ensure availability and sustainable management of water and sanitation for all by 2030 — by 2022, around 2.2 billion people still lacked access to safe drinking water, and nearly half of the global population (3.5 billion people) were without safely managed sanitation.[i]

Women and girls disproportionately bear the consequences of inadequate WASH solutions. Every day, they spend an estimated 200 million hours collecting water.[ii] This daily burden puts their health and safety at risk, affects their physical and mental wellbeing, limits job and economic opportunities and forces school dropouts.

A 2024 World Bank report highlights slow global progress towards achieving national WASH targets, hindered by persistent annual finance gaps. The global shortfall for achieving SDG 6.1 and SDG 6.2 is estimated at between US$131.4 billion and US$140.8 billion per year[iii], with Sub-Saharan Africa and South Asia facing the largest regional deficits. This financial gap not only limits public investment but also constrains access to finance for enterprises delivering market-based WASH solutions. These enterprises complement public services by reaching underserved populations. Market-based WASH approaches help bridge service gaps by providing affordable and adequate WASH solutions while driving innovation and local entrepreneurship.

Integrating gender-focused approaches into market-based WASH interventions is essential for addressing the unique needs of women and girls, and for contributing to the achievement of SDG 5 — Gender equality. However, the intersection of gender and WASH solutions remains underexplored, particularly within market-driven approaches.

Photo: Simavi/Oscar Seijkens

This Insights Brief aims to help bridge that gap by offering practical, action-oriented guidance to WASH enterprises, funders and investors and other ecosystem actors:

> It identifies key gender focus areas for enterprises and offers practical guidance on how these can be meaningfully integrated into impact measurement and management (IMM) systems. The brief also addresses common challenges such as limited gender focus in business models, weak IMM skills and difficulty tracking gender outcomes.

> It emphasises using proxy output metrics as a practical tool for assessing gender impact, especially within two to four years project timelines that are common to Impact-Linked Finance transactions.

> As part of this research, a practical Decision-Making Toolkit was developed to support WASH enterprises in strengthening IMM systems at the intersection of WASH and gender. The toolkit is designed to guide enterprises and their funders and investors in identifying relevant gender outcomes, prioritising metrics, assessing contextual conditions, and integrating best IMM practices.

> Finally, the brief offers practical recommendations to support gender mainstreaming and fit-for-purpose IMM approaches. It aims to align stakeholders' efforts with global development goals - namely SDG 5 and 6 - inspire meaningful action to reduce gender inequalities and achieve more inclusive, equitable outcomes for women and girls.

Photo: Saha Global

About
Aqua for All

Aqua for All is an international foundation committed to ensuring universal access to safe drinking water and sanitation services that are inclusive, affordable, and sustainable. Its mission is to mobilise private capital for enterprises to transform the water and sanitation sector in low- and middle-income countries. By catalysing private capital for market development and increasing access to finance, Aqua for All accelerates access to climate-resilient water and sanitation services, especially in Africa and Asia.

About
Roots of Impact

Roots of Impact is a manager of catalytic capital. As a pioneer in Impact-Linked Finance, it believes in aligning capital with incentives to drive change for people and the planet. Its mission is to empower entrepreneurs to achieve impact at scale by managing innovative funds, providing quality advisory and education, and building the field for Impact-Linked Finance.

About
ILF for WASH

The Impact-Linked Fund for Water Sanitation and Hygiene (ILF for WASH) is an innovative finance programme offering a suite of Impact-Linked Finance (results-based finance) solutions to WASH enterprises in Africa, Asia, and the Middle East. Financed by Aqua for All, ILF for WASH is developed and implemented in partnership with Roots of Impact. The programme supports WASH enterprises to scale and increase their impact.

Photo: Simavi/Oscar Seijkens

What informed the research approach

Commissioned by Aqua for All under the ILF for WASH programme, this research set out to "identify a list of output metrics measurable by enterprises in the WASH sector that can serve as sufficient proxies for demonstrating outcome-level gender impact."[1]

Within this general objective, the study explored the role and impact of WASH solutions on gender outcomes. Its sub-objectives were to:

❯ Analyse different WASH enterprise models to identify relevant output metrics by business type, and determine which of these can credibly and attributably reflect gender outcomes.

❯ Assess the feasibility of applying insights from one geographical context to another, and identify practical methods to support such transferability.

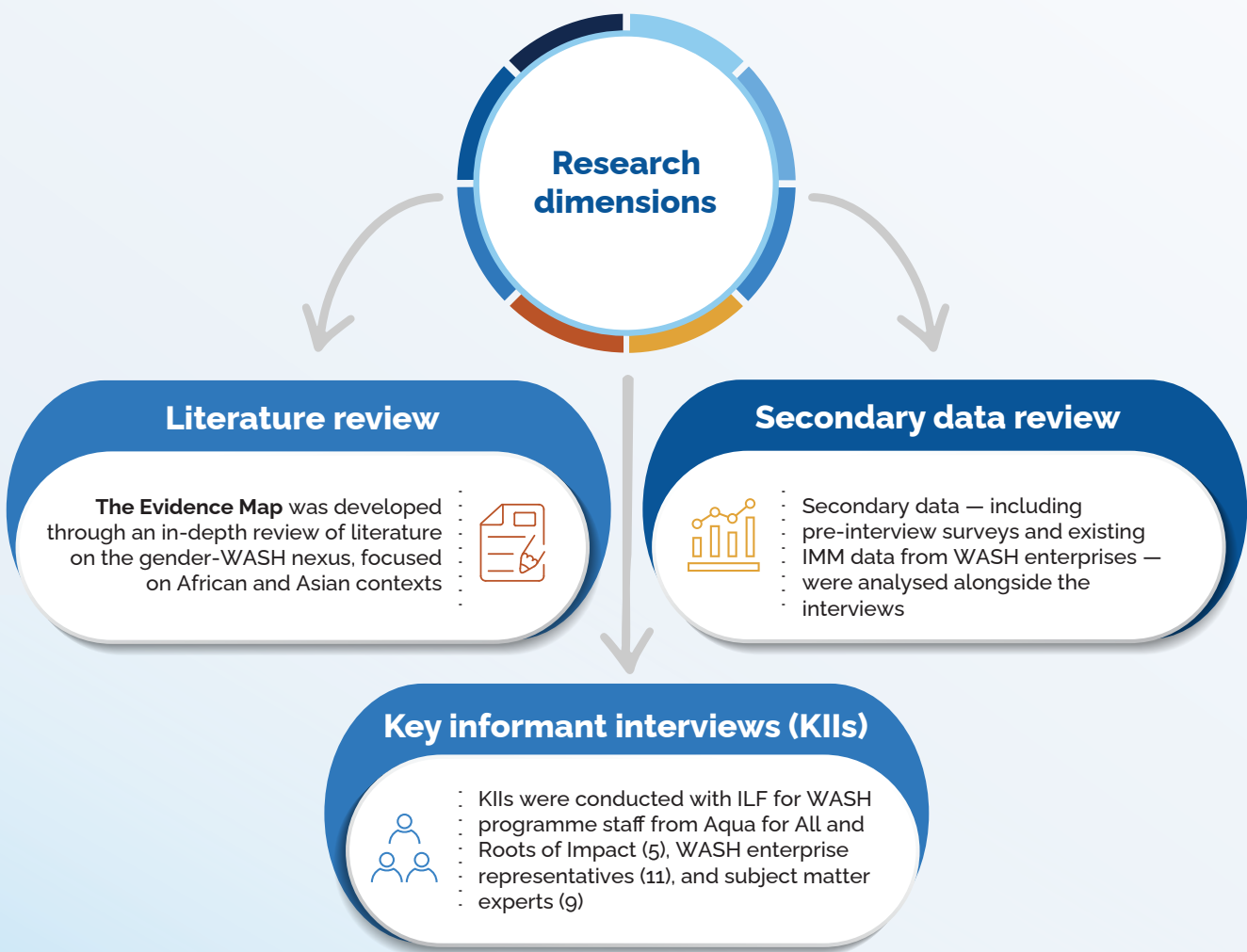The research followed a three-step approach as outlined below.

Research dimensions

Literature review

The Evidence Map was developed through an in-depth review of literature on the gender-WASH nexus, focused on African and Asian contexts

Secondary data review

Secondary data — including pre-interview surveys and existing IMM data from WASH enterprises — were analysed alongside the interviews

Key informant interviews (KIIs)

KIIs were conducted with ILF for WASH programme staff from Aqua for All and Roots of Impact (5), WASH enterprise representatives (11), and subject matter experts (9)

Figure 1: Research dimension

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[1] Output: The immediate services or products delivered by WASH enterprises - such as toilets installed, water connections provided, or hygiene sessions conducted; Outcome: The short- to medium-term changes or effects resulting from those outputs - such as improved hygiene practices, reduced time spent collecting water, or increased participation of women in decision making.

Who participated in the research

The research reviewed 11 WASH enterprises operating across Africa (7) and Asia (4), reflecting a range of business models and services as well stages of (commercial) maturity; from growth-stage to expansion-stage and established[2]. The sample included seven (drinking) water enterprises and four focused on sanitation. These enterprises provided a mix of drinking water solutions, piped household water connections, and public and private sanitation services. Each operated at different points along the WASH value chain, and the sample was selected to capture the variety of market-based approaches.

Key areas of gender-related data collection by these enterprises included customer satisfaction, access and outreach, health, time savings, safety, security, and women's empowerment.

WASH enterprises details

Water (7)

Drinking water

Water filter:
Aqua Clara Kenya,
Folia Water

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Water kiosks:
Project Maji, Saha
Global, Komodo
Water

Piped connection

Household:
Water Access
Rwanda, 4Ward

- - - - - - - - - - - - - - -

Public points:
Water Access
Rwanda, 4Ward

Sanitation (4)

Public sanitation

Sara Plast,
Bhumijo

Private sanitation

Fresh Life,
LiquidGold
Africa

Figure 2: WASH enterprise details

Variation in IMM maturity and methods

Enterprises showed varying levels of IMM maturity, influenced largely by their business models and degree of interaction with end users. The IMM processes and systems observed were grouped into three categories: nascent, evolving, and advanced — based on how enterprises collect and use data.

Most enterprises focused on output-level metrics such as access and customer satisfaction, while only a few tracked more complex outcome-level impacts. Moreover, prevailing social and gender norms often resulted in men being registered as the primary users in contracts and databases, even though women were the main users of the service. This likely distorts gender-disaggregated data and does not tell the full story.

2 Enterprises in earlier stages were not included, since these often do not yet have the size and capacity to develop and manage IMM systems.

What the research revealed

Mapping gender impact in WASH

This research included a comprehensive desk review to explore the gender and WASH nexus, drawing on research reports and papers, systematic reviews, meta-analyses and expert interviews. The evidence examined how WASH interventions influence gender participation, agency and outcomes across various contexts. Most studies relied on qualitative and mixed-methods research, with limited quantitative data. Insights from private sector interventions were scarce but partially supplemented with data from sampled WASH enterprises.
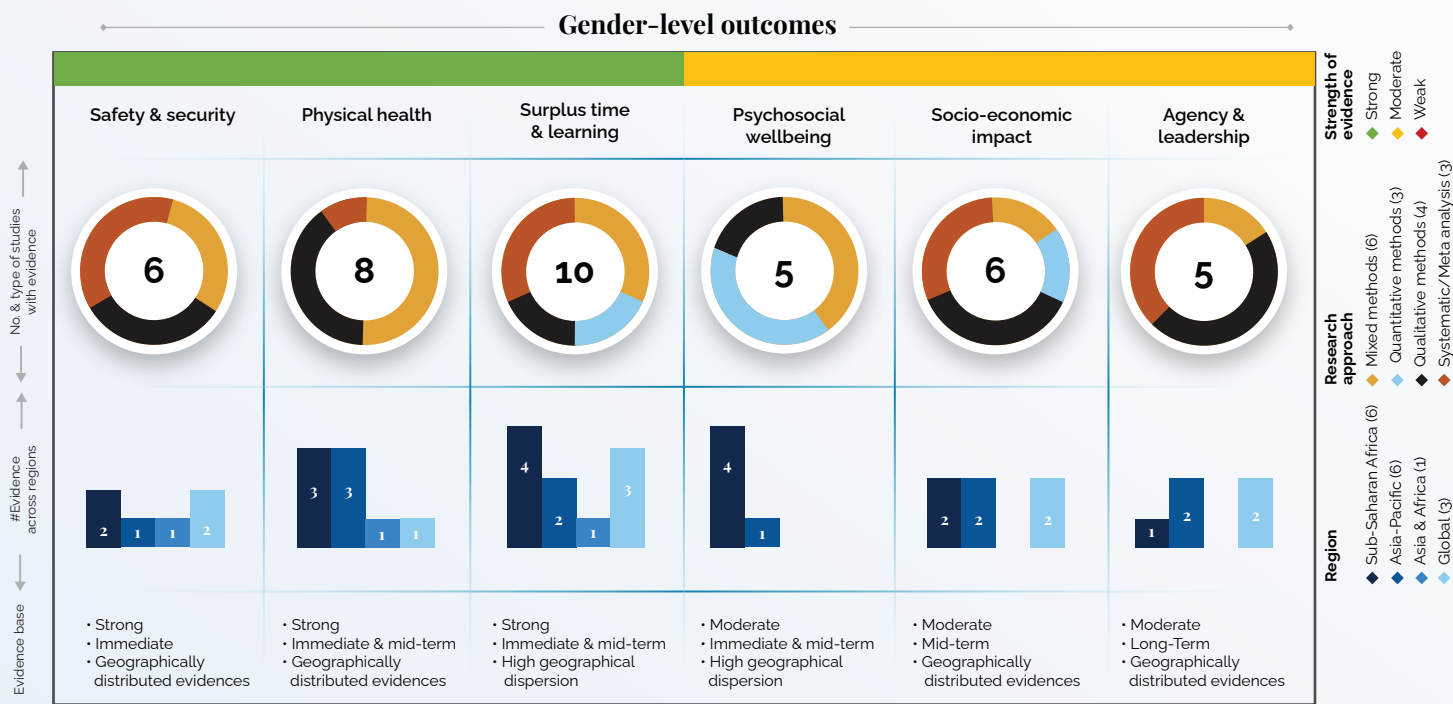
Figure 3: Evidence Map

Based on the strength, type and geographic spread of the available evidence, six categories of gender outcomes were identified and mapped according to their expected timelines: immediate, mid-term, and long-term. These outcomes were then systematically assessed and prioritised using a multi-criteria scoring framework that considered relevance, measurability and potential for short-term attribution in market-based WASH business models. This method helped develop practical recommendations for WASH practitioners measuring gender outcomes.

The desk review found the strongest associations between WASH interventions and the following gender outcomes:

a) Safety and security   b) Physical health   c) Surplus time for women and girls

These are typically achieved in the immediate to mid-term, although the timeline can vary depending on the type of WASH solution. The strength of the association is rated **high**, with geographically distributed evidence drawn from both **Asia and Africa**.

By contrast, the following outcomes were moderately associated with WASH:

a) Psychosocial well-being   **b) Socio-economic impact**   **c) Agency and leadership**

These tend to emerge over the medium to long-term. Although there is evidence from diverse geographies and study types, the strength and consistency of the association across contexts is relatively weaker than for the first three outcomes.

Overall, this mapping highlights that while some gender outcomes can be reliably linked to WASH interventions in the short to medium term, others require more time and contextual depth to manifest, and the evidence base for those is currently less robust.

Safety and security
Strong and immediate outcomes - Safe access to WASH facilities reduces exposure to gender-based violence and harassment

Physical health
Strong short- and mid-term impacts, including fewer water-borne illnesses, reduced physical strain, and improved menstrual hygiene

Surplus time and learning
Immediate to mid-term benefit - Reduced water collection/sanitation time enables educational and recreational opportunities, especially for girls

Psychological well-being
Moderate evidence of reduced anxiety and stress linked to improved access and reliability of WASH services

Socio-economic impact
Moderate and gradual, Women benefit economically through WASH-related income opportunities or reallocated time for other livelihoods

Agency and leadership
Long-term outcomes - Participation in WASH-related decision-making and governance enhances women's confidence, leadership, and dignity

Figure 4: Gender outcome categories

Exploring gender outcome variations across WASH sub-sectors

Findings from the desk review and stakeholder consultations helped identify key gender outcomes linked to different WASH solutions, revealing notable variation by solution type. For instance, filtered water solutions mostly impact health and wellbeing, while household piped water connections also contribute to time savings, safety and security gains for women.

However, the impact of WASH interventions on gender outcomes is neither uniform nor linear. Several factors — such as geography, business model, infrastructure quality, IMM capabilities, customer demographics, and cultural norms — affect how quickly and to what extent outcomes emerge for women end-users. These context-specific dynamics determine which gender outcomes are most relevant and achievable for an enterprise, and suitable for inclusion in Impact-Linked Finance or other results-based financing models.

Photo: Project Maji
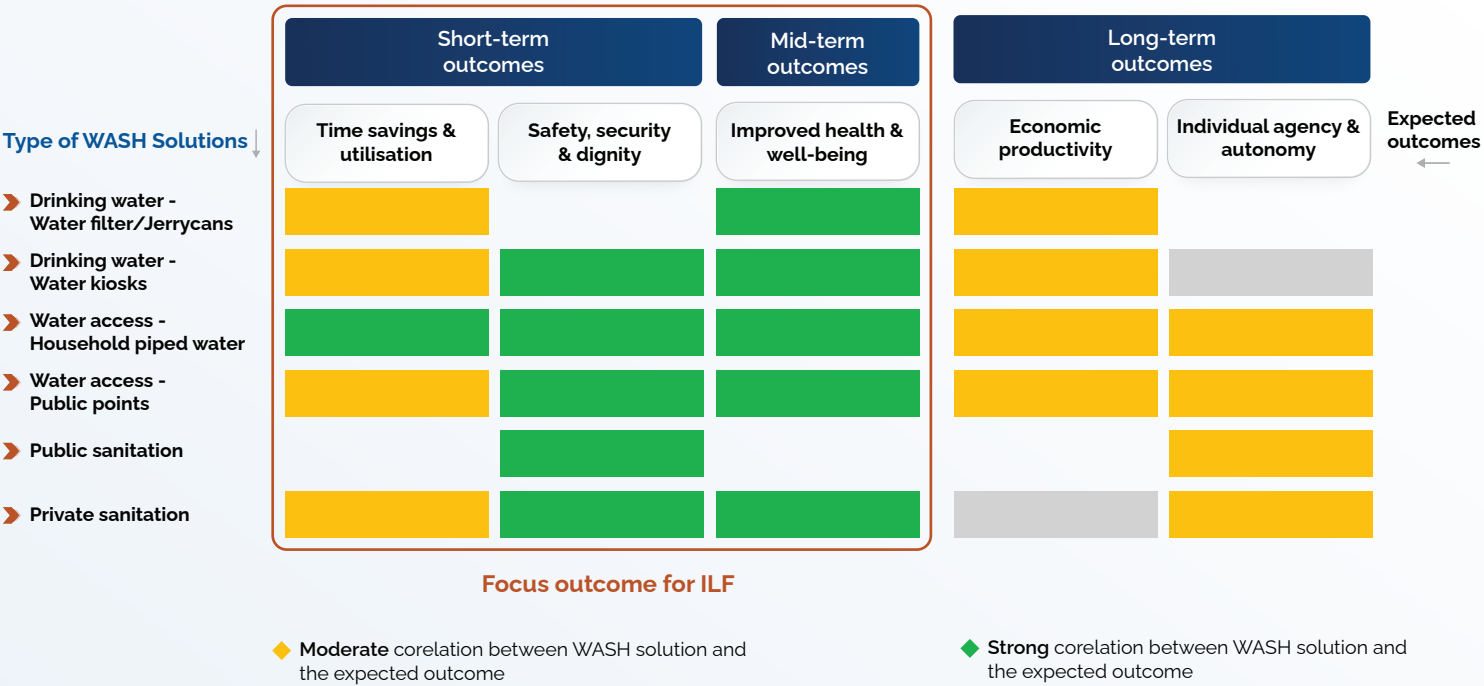
Figure 5: Focus gender outcomes for WASH

For instance, time savings are usually more pronounced for enterprises serving remote areas with poor infrastructure, while outcomes like safety, dignity, and privacy depend on local security and social norms. Health benefits vary with the quality of existing WASH systems. Longer-term impacts - such as economic productivity and autonomy — build on early gains but remain shaped by broader systemic factors, underscoring the need to tailor solutions to local contexts.

Measuring what matters:
Proxy metrics for gender outcomes in WASH

Based on the prioritised gender outcomes across WASH sub-sectors, a practical set of feasible and reliable metrics is outlined to assess gender impacts effectively. Proxy metrics are essential for measuring gender outcomes in WASH, because they often take longer to materialise over the long term and are challenging to measure directly within short project cycles.

⏱ Time savings and utilisation

1.1 Average time primary water collector spends per day collecting & Point of Use (POU) treatment of drinking water, by sex and age

1.2 Average time primary water collector spends per day collecting water for all household needs, by sex and age

1.3 Average time individual spends per day accessing and using sanitation facility, by sex and age

1.4 Average time individual spends per day managing household sanitation needs, including cleaning latrines or managing waste disposal, by sex and age

✚ Health and well-being

2.1 Proportion (%) of individuals who reported incidences of waterborne diseases in the past month, by sex and age

2.2 Proportion (%) of individuals who have experienced water insecurity in the past four weeks, by sex and age

2.3 Proportion (%) of individuals who have worried in the last four weeks that they would not have enough water for all their needs, by sex and age

2.4 Proportion (%) of individuals using safely managed sanitation services, by sex and age

2.5 Percentage of women and girls reporting reduced physical burden from water collection

2.6 Percentage of individuals reporting musculoskeletal problems (e.g., back pain, neck pain) or injuries related to water collection, by sex and age,

🔒 Safety, security and dignity

3.1 Proportion (%) of individuals who felt unsafe collecting water in the last four weeks due to fear of being harmed or assaulted by someone, by sex and age

3.2 Proportion (%) of individuals who believe that women and girls in their community face the risk of being physically harmed or assaulted when collecting water, by sex and age

3.3 Proportion (%) of individuals who reported that the sanitation location they used most often in the last four weeks was clean, private, and safe, by sex and age

3.4 Proportion (%) of individuals who felt unsafe at the sanitation locations they used most often in the last four weeks due to fear of being harmed or assaulted by someone, by sex and age

3.5 Proportion (%) of individuals who believe that women and girls in their community face the risk of being physically harmed or assaulted when accessing sanitation locations, by sex and age

Figure 6: Metrics for gender outcome measurement

In the context of Impact-Linked Finance, with transactions typically spanning over two to four years, short- and medium-term outcomes should be prioritised. However, for longer-term programmes, including beyond Impact-Linked Finance timeframes — additional outcomes such as socio-economic impact and agency become increasingly feasible and relevant to target.

To ensure that gender metrics are meaningful and actionable across diverse contexts, WASH enterprises and Impact-Linked Finance transaction managers are encouraged to apply a SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) framework for defining metrics. Ideally, these metrics should be rigorously field-tested, recognised as reliable by global WASH sector agencies, and/or aligned with existing standard sector practices.

Assessing the contextual conditions for gender outcomes in WASH

Selecting appropriate metrics for an Impact-Linked Finance framework should be tailored to a WASH enterprise's contextual conditions. This is a critical step to ensure high relevance as well as measurement feasibility for transaction managers and enterprises alike.
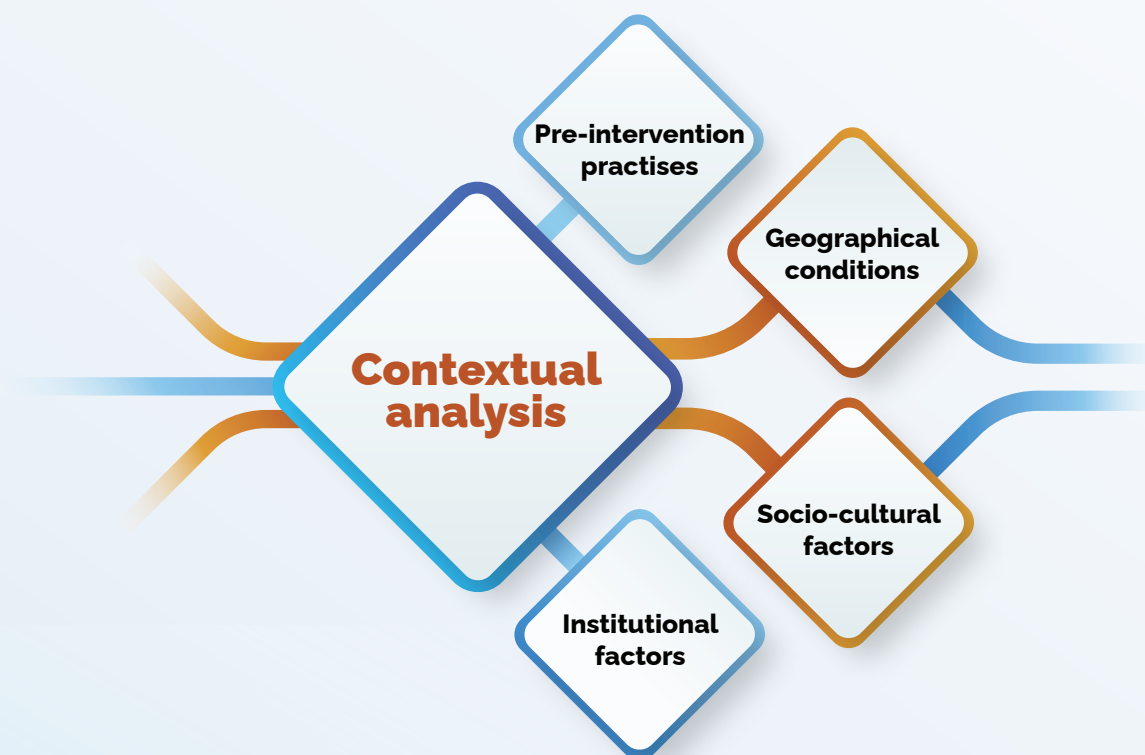

Figure 7: Contextual conditions for measuring gender outcomes

Key conditions should include:

1. Pre-intervention practices: Understanding existing behaviours, norms, and practices around WASH before any intervention is critical. This involves examining how different genders currently access and use WASH services, manage hygiene needs and participate in household or community-level decision-making. It is also important to identify existing health and WASH-related challenges, such as frequent illness due to poor sanitation, lack of menstrual hygiene support or limited access to safe drinking water. These insights provide a baseline for designing relevant interventions and for measuring meaningful change over time.

2. Geographical conditions: Physical and environmental factors — such as terrain, climate, infrastructure availability, and distance to water sources — greatly affect access to, effectiveness and reliance of WASH services, particularly in areas prone to flooding or droughts. Such conditions also influence how time is used, exposure to risks and the burden of access, particularly for women and girls.

3. Socio-cultural factors: Cultural beliefs, social and gender norms, roles, and expectations play a significant role in shaping how men, women and marginalised groups experience WASH services. These factors determine who is responsible for water collection, who participates in public forums, and whose needs are prioritised in design and delivery. Importantly, gender-based violence (GBV) within communities — including risks faced by women and girls when accessing sanitation facilities or water sources — must also be considered. Additionally, stigma and taboos around menstruation, hygiene and sanitation can further limit women's and girls' access to services, participation in programmes and ability to exercise agency. Addressing these dynamics is critical for designing inclusive, gender-responsive WASH interventions.

4. Institutional factors: Local governance structures, service providers and community organisations also influence gender outcomes. Considering operational and IMM capacities of WASH enterprises is important to contextualise outcomes and ensures feasible measurement. Understanding the strengths and limitations of an enterprise's internal systems helps to identify proxy metrics that are aligned with its scope, capabilities and sphere of influence.

Together, these factors support the selection of suitable proxy metrics and understand their potential as a marker of gender outcomes being achieved in different contexts.

Bringing it together: Best practices for gender intent in market-based WASH solutions

WASH enterprises could play a catalytic role in advancing gender outcomes, yet the effect of their solutions is often overlooked or inadequately measured.

While most enterprises focus on service delivery efficiency, their solutions inherently shape women's lives in profound ways, including in areas such as time use, safety, mobility and participation in economic or household decision-making.

However, these gendered effects are rarely targeted or systematically measured, and they vary significantly depending on local realities such as infrastructure gaps, social norms and household dynamics.

To strengthen the credibility of their gender impact, WASH enterprises should move beyond gender-neutral approaches to actively integrate gender considerations into product design, service delivery and customer engagement strategies.

For example, understanding how women interact with water points, sanitation facilities or hygiene products can help develop more inclusive models that better respond to their needs. Partnering with local women's groups, employing women in frontline roles (for example, as water kiosk operators) and incorporating gender-sensitive training into operations can further enhance impact.

Ultimately, enterprises that embed gender intent from the outset - by aligning their business model with the needs of women and girls - are more likely to deliver meaningful outcomes and unlock broader social value.

As WASH enterprises increasingly recognise the importance of advancing gender outcomes through their solutions, it becomes essential to integrate specific gender metrics into their IMM systems. Yet, this remains challenging: measuring gender outcomes is often complex, context-specific and difficult to attribute directly to specific interventions.

For Impact-Linked Finance transactions (or other results-based mechanisms with short-to medium-term timelines), enterprises should prioritise measuring gender outcomes that are likely to emerge in the short- and medium-term and using SMART metrics that are both context-sensitive and sector-validated.

Adopting a few key best practices can help enterprises embed gender considerations more meaningfully into their IMM systems, improving both the credibility and feasibility of gender-related metrics across diverse operating settings.
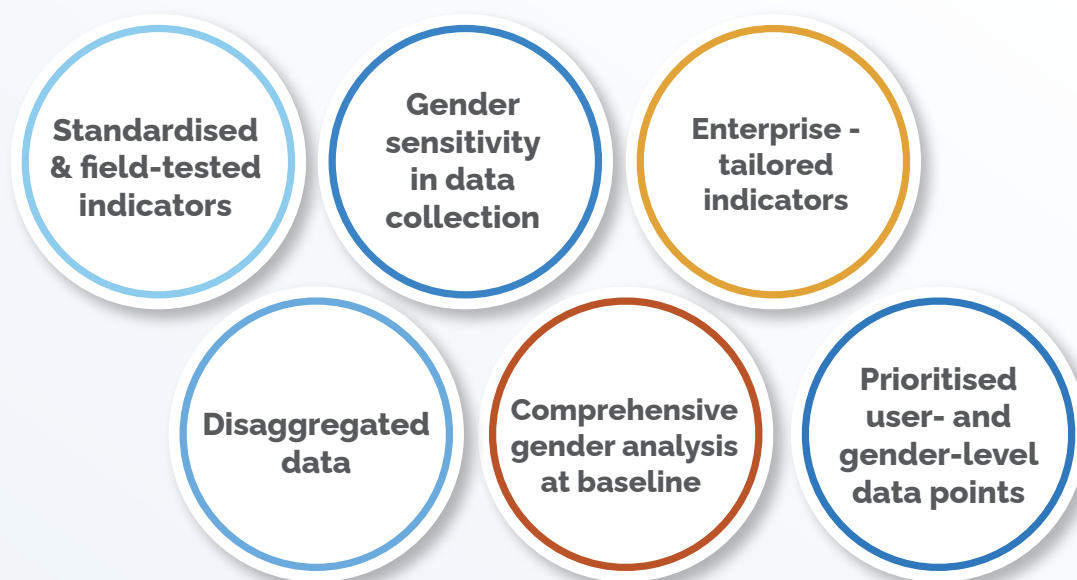
Photo: Saha Global

Figure 8: Best practices for gender outcome measurement

1. Use standardised and field-tested indicators

- Adopt globally tested and validated gender indicators from frameworks like WHO/UNICEF Joint Monitoring Programme (JMP) and the SDGs to ensure consistent, comparable and reliable measurement.

- Align measurement approaches with sector-wide standards to enable benchmarking across enterprises and regions.

2. Collect disaggregated data

- Design surveys and data collection tools to record responses by gender, age, education, occupation, income, and other relevant demographics.

- Use these data to identify differential impacts and ensure outcomes for women and marginalised groups are visible.

3. Apply gender sensitivity in data collection

- Form gender-diverse data collection teams, including female enumerators to engage with women respondents where cultural norms require it.

- Design surveys and sampling strategies that ensure inclusive, gender-representative participation.

- Train enumerators in ethical and respectful engagement, to build trust and capture accurate insights.

4. Conduct a comprehensive gender analysis at baseline

- Carry out a detailed gender analysis before implementation to establish baseline roles, responsibilities and challenges by gender.

- Gather both quantitative and qualitative data to understand socio-cultural norms and inequalities affecting WASH access and outcomes.

- Use the baseline to inform programme design and enable attribution of future changes to the intervention.

5. Tailor indicators to enterprise contexts

> Adapt recommended indicators to reflect the specific operational models, geographical locations and community dynamics of each enterprise.

> Review local cultural and infrastructural factors to refine and validate the relevance of selected indicators.

6. Prioritise key user- and gender-level data points

> Focus on a limited set of high-priority indicators aligned with expected gender outcomes.

> Avoid data overload and diluted focus by selecting only those indicators that provide meaningful insights and support informed decision-making.

> Ensure selected indicators are feasible to track regularly within an enterprise's existing capacity.

From insights to action: The way forward

This research offers actionable guidance to support WASH enterprises in measuring and managing gender outcomes more effectively. The recommendations aim to strengthen evidence-based gender integration within WASH interventions, in the context of Impact-Linked Finance, though they are equally valuable for practitioners using other results-based financing instruments with a focus on outcomes.

Figure 9: Recommended way forward

Recommendations for WASH funders

a. Technical assistance (TA) for gender mainstreaming

Support enterprises in integrating gender considerations into their vision and operations through tailored TA. This may include building capacity to design gender-responsive programmes and incorporate gender indicators into their IMM systems.

b. Pilot and scale proxy indicators using a Test–Learn–Scale approach

Introduce proxy indicators cautiously, starting with pilot testing in different WASH sub-sectors. Use stakeholder feedback and iteratively refine and validate the effectiveness of indicators before scaling them across enterprises, and ensure meaningful integration into ILF structuring.

c. Prioritise gender responsiveness over transformation

Recognise that WASH solutions often contribute to rather than directly cause systemic gender outcomes. Emphasise tracking immediate, observable changes (e.g., reduced water collection time, participation in decision-making) rather than aspirational, long-term societal shifts.

Recommendations for WASH enterprises

a. Develop a contextualised Theory of Change (ToC)

Each WASH enterprise should develop a detailed, context-specific ToC that reflects its unique interventions and operating conditions. This will help identify realistic gender outcomes and guide the selection of appropriate indicators, thereby enhancing the reliability and relevance of impact measurement.

b. Conduct a gender-sensitive baseline assessment

Enterprises should undertake baseline studies to examine gender roles, agency and participation in the target communities. This will help sharpen the ToC and contextual understanding, ensuring gender-responsive programming from the outset.

c. Ensure reliable measurement and verification of gender outcomes

> Triangulate data using mixed methods (e.g., surveys, FGDs, field visits) to enhance credibility.

> Strengthen data collection protocols by standardising measurement tools, ensuring clarity and cultural sensitivity in data collection, improving sampling representativeness and using digital tools for reliability and accuracy of data.

Limitations and considerations

While this research provides valuable insights, it acknowledges the limitations inherent in measuring the gender outcomes of WASH solutions in the short term, particularly within the framework of Impact-Linked Finance. The complex interplay of contextual, systemic and socio-economic factors makes it challenging to isolate the specific gender impacts of WASH services.

Broader influences - such as access to education, healthcare, and cultural norms - complicate the assessment. Reliance on output metrics as proxies for gender outcomes risks oversimplifying the multifaceted nature of gender dynamics. Furthermore, the study may not fully capture long-term impacts, especially in areas where WASH services were not originally designed with gender-focused outcomes in mind.

Acknowledgements

References:

i. Progress on household drinking Water, Sanitation and Hygiene (WASH) 2000–2022: special focus on gender. New York: United Nations Children's Fund (UNICEF) and World Health Organization (WHO), 2023.
ii. https://www.unicef.org/press-releases/unicef-collecting-water-often-colossal-waste-time-women-and-girls
iii. https://documents1.worldbank.org/curated/en/099050624154572979/pdf/P172944100adb1042188ab1d289e7f2f00b.pdf

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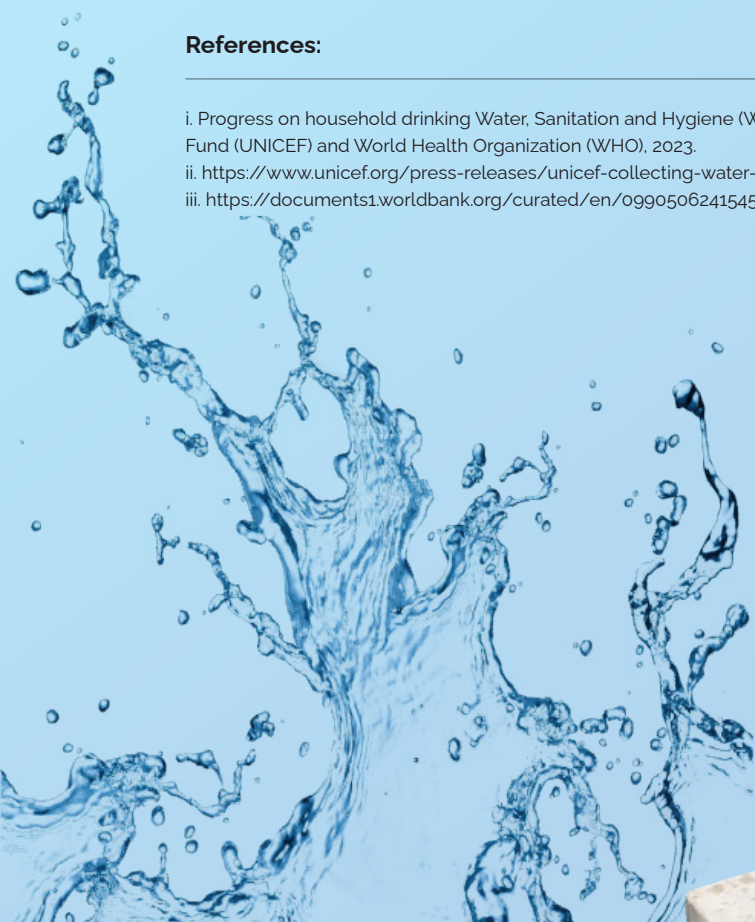
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